table-lands and mountain ranges are the only places within the tropics where healthy situations for British soldiers are to be found, no such impression is intended to be conveyed; indeed, the low rate of mortality occurring among the troops at Galle (23 per 1,000), and at Poonah, (23 per 1,000), and in several other parts, sufficiently establishes the fact, that there are many localities in the low countries of the tropics highly favourable to their health, though we are more likely to meet with stations suitable for the European constitution, at a considerable elevation above the sea; and now that it is known that marked differences as to salubrity exist even in neighbouring stations, and that a great saving of men and money may be effected by judiciously locating an army, the importance of instituting a search for such healthy positions will be acknowledged. It is only by correct statistical returns and reports that this invaluable information can be obtained.

Remarks on Tables of Marriages in the Irish Census Returns for
1841.

[*Read before the Statistical Society of London,* 16th *June,* 1845.]

SIR,   *Dublin, January,* 1845.

In the last number of the Statistical Journal, I observed some very judicious remarks by Mr. Hallam, on the Irish census, relating chiefly to the average age at marriage.

May I beg to offer a few remarks on that subject generally, and some explanation of the tables referred to by Mr. Hallam. I wish to do so, because I think in the inferences drawn from the marriage question, somewhat too exclusive attention is usually paid to the " average age," and too little notice taken of those who remain unmarried, as well in the different stages of life, as of those who do not marry at all.

It was from a desire to exhibit this information in regard to Ireland, that the table at p. xlii of the Report, was drawn up, which is quite different in its object from that at p. lxxvi, though drawn from the same original material. The Table at p. xlii. is condensed from the unmarried columns of the Tables which give the civil state of the community, and exhibits, therefore, only the *unmarried portion*, but being divided into ages, it shows the gradual diminution in the proportion which unmarried persons bear to the people of their own age in each decade. This in some degree indicates the force with which the marrying principle (so to speak), has pressed on the people enumerated in Ireland, in 1841. It would be very satisfactory to compare this Table with similar Tables for other countries, or other periods; but, though there are many which give the *état civil* of the whole community, I am not in possession of any which divide it into ages. It would have been very desirable to have given this Table in single years, but the uncertainty of the ages at the decennial periods alluded to at p. xlv of the Report, has here also operated, so that this Table, like many others in the volume, must be taken rather as an indication than a realization, of the views which guided the Irish census.

The other Table alluded to by Mr. Hallam, viz., that at p. lxxvi, is the reverse of this. It deals only with the *married portion* of the community, and of them, only with those who have married within the last eleven years. In this Table also the periods are much longer than could

have been wished, and there is besides, between this Table, and that at p. xlii, a fertile source of anomaly, arising from the voluntary nature of the returns, which especially affects the average age at marriage. It arises from the circumstance of persons returning correctly the number of years they have been married, (probably to account for their children,) but diminishing their actual age, and this diminution was peculiarly observed with married women. They clung with especial tenacity to the age of 30, (it was remarkable that unmarried women were not so reluctant to pass that age). Now if we suppose a woman to have married in 1830, at the age of 23, she would be 34 in 1841, and would have been married 11 years. This latter fact she would return correctly, but would probably call herself only 30 years of age; hence her marriage would appear to have taken place at 19, and she would accordingly be placed in the Table at p. lxxvi, in the class 17—20 years of age; while in the Table at p. xlii, she would be placed as being now between 26 and 35 years of age. Hence the *age at marriage* deduced from Table p. lxxvi, will appear earlier than it is: so indeed will the *present age*, from Table p. xlii, but they will frequently fall, as in the instance given, on different sides of a decimal division. Some such cause has probably increased the numbers in the first period of the annexed Table, which is condensed from the summary of p. lxxvi; still the numbers in the higher ages, indicate a certain retardation in the average age at which marriage is contracted.

PERIODS.	Annual Average Number of Marriages.	Annual Average Number of Marriages of *Males* 20 Years of Age, and under.	Proportion per cent. which the numbers in the preceding Column bear to the Annual average Number of Marriages in each period.	Annual Average Number of Marriages of *Females,* 20 Years of Age, and under.	Proportion per Cent. which the Numbers in the preceding Column bear to the annual Average Number of Marriages in each period.
1830—1832	46,561	5·146	11·	16,242	34·8
1833—1835	50,525	4·350	8·6	14,708	29·
1836—1838	51,236	3·377	6·6	12,409	24·
1839—1840	50,440	2·822	5·5	11,617	23·

The Commissioners Report accordingly infers, " from the Tables of marriage in the Appendix, p. lxxvi, it would seem fair to conclude that marriage is now entered upon somewhat later than in the earlier years of the decade."

The results however may be influenced by other causes, and the Report accordingly speaks with doubt, even of the average age at which the married have contracted matrimony.

I now wish to explain, why it appears to me that the average age ought not to be considered alone. One obvious reason indeed is, that the same average might be produced by very different numbers. But let us suppose, for example, two families, each consisting of four daughters. Of the first family, one daughter marries at 18, one at 20, and two remain unmarried. Of the second family, two marry at 18, and two at 20. The average age of the married persons at marriage, would be 19 in both families, but we should not be justified in saying of the first, that it was given to early marriages, merely because those

who have married, have married young. Their tendency to marriage would be very different, and this tendency is what we are in search of. Average age is but one of its elements, and to compare it at different times, we require not that age alone, nor even the extent to which it is retarded, but the part of the scale of age, in which the retardation takes place, and the changes in the proportion of persons married and unmarried, at each age, as well as of those who remain unmarried altogether.

Hence the necessity for some such Table as that at p. xlii, and if the community were stationary as to number and condition, so that the ages of the existing community could be substituted for advancing ages, and if it could be divided into single years, that Table would give correctly, not only the average age, but all the other circumstances by which tendency is indicated. We should then be able to compute, and to compare at different times, in different circumstances, and different countries, the points which seem to me the real desiderata in the marriage question : viz., *the probability whether any person at birth will marry,* and *the probable age at which he will marry,* for both of which we require the unmarried number; the average age bearing, in fact, somewhat the same relation to the probable age, which the average age at death does to the expectancy of life :—and if marriage were as certain as death, (which happily for old bachelors, it is not,) the calculation would be precisely the same ; or, if the average age at marriage were nearly constant, the Table at p. xlii, would be at once a curious record of the state of society as to marrying, *i.e.,* the degree in which the marrying principle has pressed, or been opposed, for many years past; on the same principle as that by which the encouragement given to education for many years past, is deduced at p. xxxiv, from the present state of the community as to reading and writing, viz., by assuming that marriages take place within some certain period of life, and that as few people marry after the marrying age, as there are who learn to read and write after the educational age, and then carrying back each class of the community to the years when they were respectively within that age : of this, however, the rapid diminution which the Tables show in the number at high ages, shows at once the impracticability.

But further, if the tendency Table were followed out, (for which the original returns of the census afford material.) into the different classes of society, and their occupations and circumstances of life, we should probably find it a distinct measure of condition. The annexed Table, for example, which is merely general, shows that where the deaths are most numerous, the people most ignorant, and their house accommodation the worst, there also marriages are most numerous. This Table has no other classification than locality, if it could be further classified by occupations, age and other circumstances, and all these exhibited for different periods, say every 10 years, beginning with the present century, how curiously would it compare with social and political changes during the same period.

	Rural Population.				Civic Population.			
	Ulster.	Leinster.	Munster.	Connaught.	Ulster.	Leinster.	Munster.	Connaught.
Proportion which the number of Marriages, from 1830 to 1840, bear to the population of 1841 *	1 to 19	1 to 17·8	1 to 16·3	1 to 16·3	1 to 15·7	1 to 14·2	1 to 14·4	1 to 14·5
Proportion between the number of Marriages, from 1832 to 1840, and the number of Births for the same period†	1 to 5·7	1 to 5·1	1 to 5·1	1 to 5 6	1 to 4·5	1 to 3·8	1 to 4·2	1 to 4·4
Proportion between the number of Marriages, from 1830 to 1840, and the number of Births resulting from those Marriages*	1 to 2 24	1 to 2·22	1 to 2·22	1 to 2·26	1 to 2·02	1 to 1·90	1 to 2·03	1 to 2·05
Proportion of Births to the Population	1 to 31	1 to 30	1 to 30	1 to 28	1 to 34	1 to 31	1 to 30	1 to 29
Proportion of Deaths to the Population	1 to 68·9	1 to 60·4	1 to 60	1 to 59	1 to 40·9	1 to 37·3	1 to 35·9	1 to 36·4
Per Cent. of the Population unable to read or write . . .	42	47	64	73	24 8	31	42·5	49
Per Cent. of the Population living in the 4th, or lowest class of house accommodation	35·3	34	54	53·6	18·8	41	40	44

* These proportions have been calculated from the Tables of Marriages at pp. 460—487.
† These proportions have been calculated from the Tables of Married Persons at pp. lxxvi.—lxxix. Only the number of marriages from 1832 to 1840 have been taken, that the periods might correspond with the periods given in the Table of Births at p. 458.

Here, perhaps, I may notice another part of Mr. Hallam's paper, as it is connected with this subject, where he disputes, " the well-known law that the most marrying race have the lowest cypher of fecundity," and adds, " we cannot possibly admit that such a law is well known, or see the slightest ground for believing that it is a law of nature at all." The law is explained and numerically supported by Mr. Gregg in his Social Statistics of the Netherlands, page 8, (published in 1835), and I must say seems to be based in nature. Every one will admit, that all people are not endowed with the same power of reproduction, any more than they are with that of self-preservation, the other great instinct of nature; whether from health, strength, condition, or circumstances of life, all of which are endlessly variable. There is of course an average, but all are not alike. Now if we suppose 1,000 persons of each sex, the 100 of each who are most likely to marry, will probably be those best fitted by nature or circumstances for reproduction, and they will have the largest families. There will be individual exceptions of course, but they confirm the rule, they do not defeat it. The second 100 will be less fitted, the third less still, and so on. In these circumstances the average number to a family must diminish as the number of marriages increases, that is, the average of the first 100, will be larger than the average of the first 200, and so on. I am aware there can be no proof, that the most productive will have the strongest marriage tendency, but the result will be the same, if merely stated, that—as all marriages are not equally productive, the greater the number of marriages is, the less their average produce will probably be. Even this, of course, is only a probability; but I think it is based in nature, and argues no " curse of barrenness," as Mr. Hallam supposes. I wish I could produce some numerical evidence, and I think the original returns

of the Irish census would furnish such. The above table, indeed bears out the inference, except in the case of Connaught, where we know the marriage returns were the most imperfect. This is among the many things for which we may look to the admirable accumulations of facts in the annual reports of the English Registrar-general.

It must also be remembered that there are many married couples who do not live together. Such, for instance, as domestic servants. On the 6th June, 1841, there were in Ireland no less than 23,622 males and 39,197 females so situated. These parties produced, in the ten years, only 28,638 children, not one-fourth the number produced by parties more favourably circumstanced.

This class exists in every community, and it obviously tends to reduce the average number of children per marriage.

I have little else to add;—Mr. Hallam says, he " can attach no meaning to births averaging 1 to 3, and after much consideration, can only presume it to be a misprint." It is a misprint, and is stated in the errata to be so. It ought to be 1 to 30·3.

To one other paragraph I may advert. The Commissioners stating the incompleteness of the returns made to them, say, among others, that the *deaths* are one-fourth in defect. Mr. Hallam understands this to mean 25 per cent. of error in the deductions drawn from them. This by no means follows. It is only that the base is less broad; as when Mr. Rickman, in the preface to the population returns of 1831, argues on tables of mortality, from the ages of 10,530,671 persons, out of the whole population of 11,978,875 ; it was only as if the population had consisted of the former number. The defect did not involve an error, provided the returns he did get were correct.

I fear I have trespassed on your time. My object was to show wherein the table at p. xlii of the Appendix to the Report of the Irish Census Commissioners differed from that at p. lxxvi, and that the average age at which the married people have contracted matrimony, which Mr. Hallam has deduced from the latter, is not alone a sufficient measure of the objects which the marriage question is calculated to afford. These deductions are of great interest; they are among those which may yet be, in some degree, deduced, even from the published Tables of the Census; and I rejoice greatly to see so distinguished and able a statist as Mr. Hallam bestow even a passing thought upon them. The original papers of the Census afford much more information. They are not now in a state which admits of easy reference, but may, perhaps, be so at some future time, if they become the province of some special department.

The three subjects which, in connexion with marriages, the Irish Census Commissioners have dwelt upon, are thus described :—" 1st. A division of the whole community into three heads—unmarried, married, and widowed.   2nd. The ages of the married portion of the community at the period of marriage ; and 3rd. A tolerably correct account of the number of children of each sex born to those marriages." This last is a very curious, and not unimportant, subject, much too large to be entered upon at the close of a communication. I shall gladly return to it at a future time, if leisure be afforded me, as I think the phenomena of sex may be found to arrange themselves around laws of no difficult deduction. Meantime, I would especially beg attention to that para-

graph of the Report, in which the Commissioners remark that, "difference of age has a different value at different periods of life; in other words, that the *sum* as well as the *difference* of the ages of parents ought to enter into all calculations on the probabilities of sex of children," because the latter alone has hitherto been attended to.

I am, &c.,

Joseph Fletcher, Esq.   THOMAS A. LARCOM.

Reply to the preceding Remarks.

[*Read before the Statistical Society of London,* 16*th June,* 1845.]

MY DEAR SIR,   24, *Wilton Crescent, June* 5, 1845.

I HAVE been favoured by you with a sight of Captain Larcom's remarks on a paper communicated by me to the Statistical Society on the 15th of April, 1844, wherein I adverted to some errors, as they appeared to me, in the Report of the Commissioners appointed to take the Census of Ireland in 1841. If these remarks by Captain Larcom could have been read at the last meeting of the Society, I might perhaps have contented myself with a verbal reply. But as that was not the case, and as it will not be in my power to be present on the 16th instant, I must request you to lay my short observations before the meeting on that evening.

The Table in p. xlii is said by Captain Larcom to exhibit only the unmarried portion, and to show the gradual diminution in the proportion which unmarried persons bear to the people of their own age in each decennial period. This I never understood otherwise. But the other table, that in p. lxxvi, he proceeds to say, is the reverse of this, and dealt only with married persons. Surely, however, this comes to the same thing. If, out of 100 persons, at a given age, 93 were unmarried, it follows that 7 are married; and if we begin at the other end, and find that 41·3 are married, it equally follows that but 58·7, instead of 93, are unmarried. In both tables the period is much the same, being from 17 to 25 in the former, and under 25 in the latter; the only difference being as to marriages under 17, which, among males, cannot be very numerous. I conceive that the unmarried persons, in p. xlii, do not include widowers. This seems to follow from Captain Larcom's reasoning on *marriage tendencies.*

The " fertile source of anomaly, arising from the voluntary nature of the returns " to which Captain Larcom adverts, may very probably tend to explain the discrepancy, but does not remove it. The observations, therefore, in pp. 3 and 4 of his paper, may be well founded without affecting my own.

The vindication of Captain Larcom's assertion of a " well-known law, that the most marrying race have the lowest cypher of fecundity " is ingenious; but I cannot think it satisfactory. The " most marrying race " will surely be that in which marriages take place earliest; in which women do not lose, in this sense, those years of life when nature particularly fits them for reproduction. For, in all questions of this kind, we must look to the age of female marriages far more than to that of males. Now, if habits of prudence, in both sexes, extend the average period of matrimony to 27 or 28 years of age in the woman, rather than 23 or 24, it seems a paradox to suppose that the fecundity of the older brides will exceed that of the younger. And this, on the great scale, must